WHAT IS CLAIMED IS:

1. A volume management method for setting at least a logical volume over a plurality of physical

5 storage devices, said method comprising the steps of:

receiving a volume creation request specifying a requested storage capacity and requested average performance;

forming a judgment as to whether or not there

10 exists an unoccupied area satisfying said requested storage capacity throughout said storage devices;

forming a judgment as to whether or not all volumes, which include existing volumes each sharing any of said storage devices with a volume to be

15 created and said volume to be created, each satisfy its requested average performance by referring to information of requested average performance on a storage means for each of said existing volumes if said unoccupied area satisfying a requested storage

20 capacity is determined to exist; and

setting said volume to be created if all said volumes each satisfy said requested average performance.

2. A volume management method according to

25 claim 1 wherein:

all said volumes pertain to the same parity group; and

a request for creating a volume is a request to move said volume from another parity group.

5   3. A volume management method according to claim 1 wherein, if existing unoccupied areas do not satisfy at least one of said requested storage capacity and said requested average performance, an unoccupied area is again searched for by softening a condition for satisfying said requested storage capacity by reduction of said requested storage capacity by a predetermined fraction if said requested storage capacity is not satisfied, or by softening a condition for satisfying said requested average performance by reduction of said requested average performance by a predetermined fraction if said requested average performance is not satisfied.

4. A volume management method for searching a storage apparatus comprising a plurality of physical storage devices, on which at least one logical volume is set, for an unoccupied area used by a new volume over some of said physical storage devices, said method comprising:

receiving an unoccupied-area-searching request specifying information on requested average

performance;

forming à judgment as to whether or not all volumes, which include existing volumes and said new volume supposed to be added to said existing volumes, 5 each satisfy its requested average performance by referring to information of requested average performance on a storage means for each of said existing volumes which share any of said storage devices with an unoccupied area; and

10 displaying information on said area if all said volumes each satisfy said requested average performance.

5. A volume management apparatus for setting at least a logical volume over a plurality of 15 physical storage devices, said apparatus comprising:

a means for receiving a volume creation request specifying a requested storage capacity and requested average performance;

a means for forming a judgment as to whether 20 or not there exists an unoccupied area satisfying said requested storage capacity throughout said storage devices;

a means for forming a judgment as to whether or not all volumes, which include existing volumes 25 each sharing any of said storage devices with a

volume to be created and said volume to be created,

each satisfy its requested average performance by

referring to information of requested average

performance on a storage means for each of said

5   existing volumes if said unoccupied area satisfying a

requested storage capacity is determined to exist;

and

a means for setting said volume to be created

if all said volumes each satisfy said requested

10   average performance.

6.   A volume management apparatus for

searching a storage apparatus comprising a plurality

of physical storage devices, on which at least one

logical volume is set, for an unoccupied area used by

15   a new volume over some of said physical storage

devices, said apparatus comprising:

a means for receiving an unoccupied-area-

searching request specifying information on requested

average performance;

20   a means for forming a judgment as to whether

or not all volumes, which include existing volumes

and said new volume supposed to be added to said

existing volumes, each satisfy its requested average

performance by referring to information of requested

25   average performance on a storage means for each of

said existing volumes which share any of said storage

devices with an unoccupied area; and

a means for displaying information on said

area if all said volumes each satisfy said requested

5   average performance.

7.   A program to be executed by a computer to

implement a function of setting at least a logical

volume over a plurality of physical storage devices

wherein said program has functions of:

10   receiving a volume creation request specifying

a requested storage capacity and requested average

performance;

forming a judgment as to whether or not there

exists an unoccupied area satisfying said requested

15   storage capacity throughout said storage devices;

forming a judgment as to whether or not all

volumes, which include existing volumes each sharing

any of said storage devices with a volume to be

created and said volume to be created, each satisfy

20   its requested average performance by referring to

information of requested average performance on a

storage means for each of said existing volumes if

said unoccupied area satisfying a requested storage

capacity is determined to exist; and

25   setting said volume to be created if all said

volumes each satisfy said requested average
performance.

8. A program to be executed by a computer to
implement a function for searching a storage
5 apparatus comprising a plurality of physical storage
devices, on which at least one logical volume is set,
for an unoccupied area used by a new volume over some
of said physical storage devices wherein said program
has functions of:

10   receiving an unoccupied-area-searching request
specifying information on requested average
performance;

forming a judgment as to whether or not all
volumes, which include existing volumes and said new
15 volume supposed to be added to said existing volumes,
each satisfy its requested average performance by
referring to information of requested average
performance on a storage means for each of said
existing volumes which share any of said storage
20 devices with an unoccupied area; and

displaying information on said area if all
said volumes each satisfy said requested average
performance.

9. A volume management method adopted by a
25 management computer included in a computer system

comprising a storage apparatus having a plurality of
physical storage devices over which at least a
logical volume is set, a client computer for making
accesses to information stored in said storage

5 apparatus, said management computer for managing
volumes in said storage apparatus and a network for
connecting said storage apparatus, said client
computer and said management computer to each other,
said method comprising the steps of:

10 receiving a volume creation request specifying
a requested storage capacity and requested average
performance;

forming a judgment as to whether or not there
exists an unoccupied area satisfying said requested

15 storage capacity throughout said storage devices;

forming a judgment as to whether or not all
volumes, which include existing volumes each sharing
any of said storage devices with a volume to be
created and said volume to be created, each satisfy

20 its requested average performance by referring to
information of requested average performance on a
storage means for each of said existing volumes if
said unoccupied area satisfying a requested storage
capacity is determined to exist; and

25 setting said volume to be created if all said

volumes each satisfy said requested average performance.

10. A volume management method for searching a storage apparatus for an unoccupied area used by a
5   new volume, adopted by a management computer included in a computer system comprising said storage apparatus having a plurality of physical storage devices over which at least a logical volume is set, a client computer for making accesses to information
10   stored in said storage apparatus, said management computer for managing volumes in said storage apparatus and a network for connecting said storage apparatus, said client computer and said management computer to each other, said method comprising the
15   steps of:

receiving an unoccupied-area-searching request specifying information on requested average performance;

forming a judgment as to whether or not all
20   volumes, which include existing volumes and said new volume supposed to be added to said existing volumes, each satisfy its requested average performance by referring to information of requested average performance on a storage means for each of said
25   existing volumes which share any of said storage

devices with an unoccupied area; and

displaying information on said area if all said volumes each satisfy said requested average performance.

5